

Building Business Value thru Industrial Environmental Performance

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Experience UW-Madison

- Started in 1992 with Motorola Project
- Series of DfE design tool development projects and education for AMP, Seagate, United Technologies, Patagonia, Boeing, Johnson & Johnson
- EMS and footprint analysis of the Field Museum
- Environmental Purchasing Project for Healthcare
- Focus mostly on electronics (IEEE conferences) and healthcare sectors
- Motorola Labs Research Visionary Board 2002

Audience Background

- Primarily Business Responsibility
- EHS Managers
- Product/Service Design

Audience Background

- What kinds of environmental management systems do you have?
 - ISO 14K certified
 - ISO 14K but not certified
 - Permit/compliance focused
 - Proactive
 - other

Audience Background

- What is the biggest barrier to progressive environmental change in your organization?

What kinds of business/engineering/design assessments do you routinely get involved in?

- Quality?
- Baldrige?

What kinds of environmental assessments do you get involved in?

- Permit applications?
- EMS certification?
- Materials assessments?

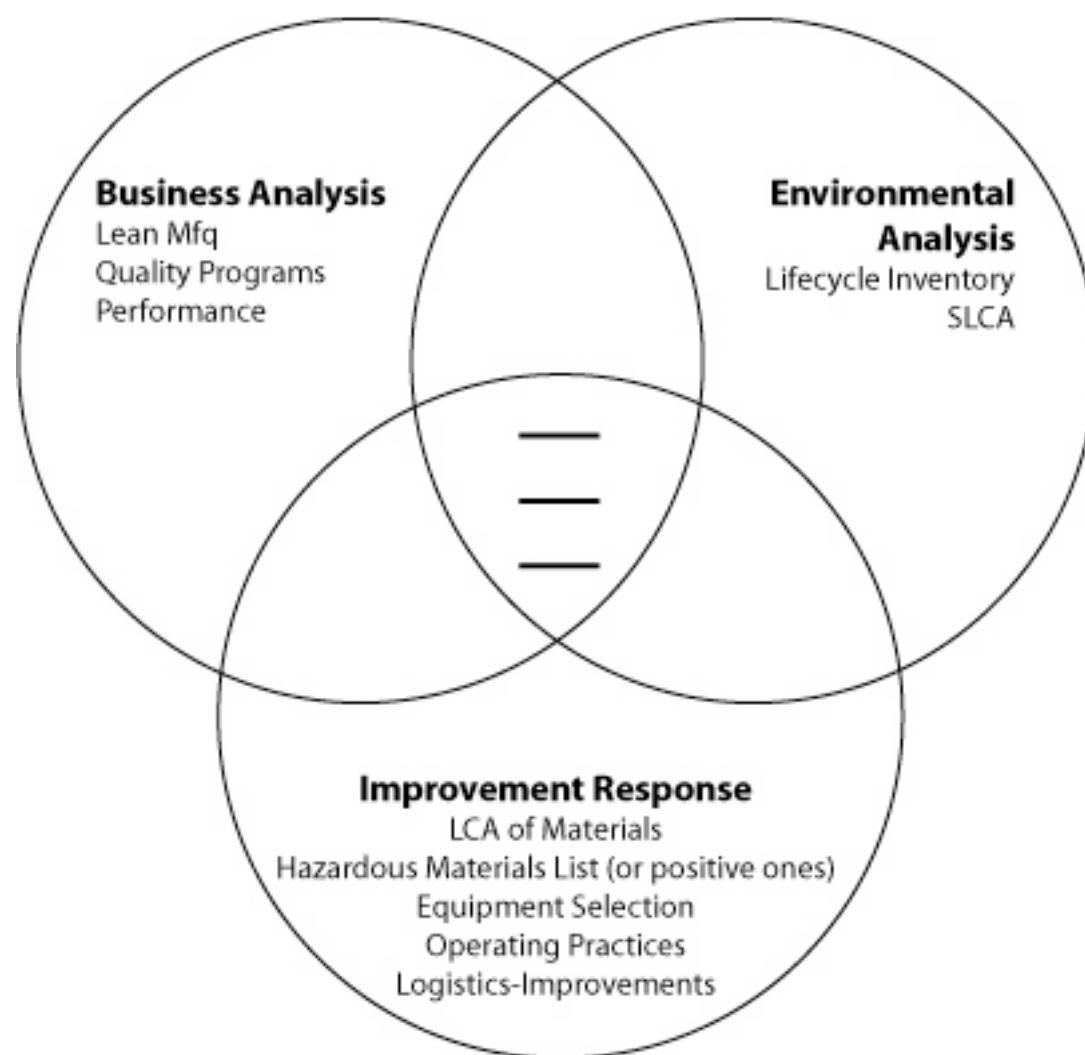
Importance of Scale

“Flying at 30,000 feet”



Perspective

- There are three dimensions to improving environmental performance.
 - Business Decisions
 - Environmental analysis
 - Environmental improvement
- This talk is based on insight and generalization from over twelve years of design tool development and business application--inductive talk not deductive



Myth #1

- The notion that environmental issues costs jobs is false. Other transaction costs are higher. In fact the ability to think strategically about the environment has positive business significance.

Myth #2: The advantages of proactive environmental management are so obvious that business leaders will rush to use the tools.

- Waste reductions
- Cost savings
- Improved compliance and efficiency
- Reduced liability

Almost by Accident

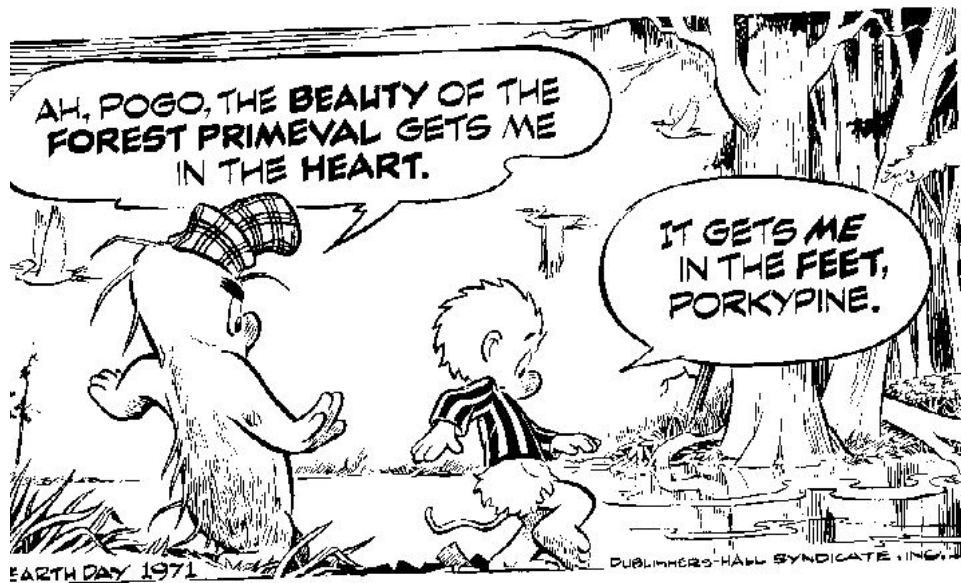
- Companies have discovered that environmental goals yield unexpected savings and revenue streams.
- Claudia Deutsch Sept 9, 2001 New York Times

Objective

- To introduce you to the relationship between business value and environmental value.
- Try to strike a balance between the “why of it” and the “how of it.”









Spence put a new twist on an old philosophy. To be one *with* everything, he says, you've gotta have one *of* everything. That's why he also has the new . So he can seek wisdom on a mountain top. Take off in hot pursuit of enlightenment. And connect with Mother Earth. By looking no further than into

the planet's coolest 4-door compact pickup.

He says it gives him easy access to inner peace. Which makes him one happy soul.

Connect the Dots



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What is Business Value?

What does building business value
mean to you?

Business Value

- Tangible
- Intangible

Value Creation

- Exclusive reliance on financial measures is insufficient (Kaplan and Norton)
- Financial measures are lag indicators
- Value creation strategies have shifted from managing tangible assets to knowledge-based strategies

Framework for Organizing Strategic Objectives

- Financial--Strategy for growth, profitability, risk--shareholder perspective.
- **Customer--Strategy for creating value and differentiation**
- Internal Business Processes--Strategy priorities for business processes that create satisfaction
- Learning and Growth--Priorities that create a climate that supports organizational change, innovation and growth

Your Customer and the Environment

What does your customer think about the environment? How do you know?

Do they assume that you are in full compliance with all relevant environmental regulations?

Voice of the Customer(VOC)

- Quality is not conformance to specification
- Rather it is meeting customers requirements
- Who are your customers?
- Many sources of data

Kano Technique

Type of Attribute	Customer Perception of an Environmental Attribute	
	When the attribute is present in the product	When the attribute is absent from the product
One Dimensional	Satisfied	Dissatisfied
Must-Be	No feeling	Dissatisfied
Attractive	Satisfied, delighted	No feeling
Indifferent	No feeling	No feeling
Reverse	Dissatisfied when attribute is present or satisfied when attribute is absent	

Internal Business Processes

- Do you have the capability to add environmental attributes in your design process?
- How often do you use it?

What is Environmental Performance?

- Do you know?
- Does your supply chain know?

Activities that affect shareholder value

- Innovation
- Cost and Risk Reduction
- Growth Path and Trajectory
- Reputation and Accountability

The rest of our discussion

- International signals
- Design for the environment
- A recent environmental leader

International Activities--Eco Products 2001



2002 Existing and Projected Materials Regulations

	Electronic Assembly (component, laminate, interconnect)			Mechanical Assembly (plastic, metallic housings)			Other (battery, backlight, cables, packaging, etc.)		
	Americas	Europe	Asia	Americas	Europe	Asia	Americas	Europe	Asia
Pb		2006 ²	'00-'05 ³		2006 ²		2002 ⁶	Pre-'02 ⁷	
Cd		2006 ²			Pre-'02 ⁴			Pre-'02 ^{7,8}	
Hg	'02-'06 ¹	2006 ²		'02-'06 ¹	2006 ²		'02-'06 ¹	Pre-'02 ⁷	
Sb									
Cr(VI)		2006 ²			2006 ²			Pre-'02 ⁷	
Organic		2006 ²	'00-'05 ³		Pre-'02 ⁵ 2006 ²			2006 ²	

Br/Cl

Color Code:

Green = no restrictions on the horizon

Yellow = voluntary restriction or requirement not likely to be in effect w/in 5 years (but probably will later)

Red = is or likely to be restricted within 5 years (2007)

¹Northeastern states requiring phase-out of mercury in all products

²EU RoHS directive sets bans on Pb, Cd, Cr, Hg and PBB & PBDO flame retardants beginning 2006 (select exemptions exist)

³Japanese companies have announced voluntary phase-outs

⁴Cd restricted as a stabilizer and pigment in plastic (1991)

⁵Eco-labels prohibit use of halogenated compounds in plastics (Blue Angel, TCO, etc)

⁶California Proposition 65 lawsuits filed over use of lead in cables; settlement reached with restrictions

⁷Cd, Cr, Hg, Pb restricted in product packaging

⁸Cd restricted as stabilizer in electrical wiring, cables, cords, etc.

Current Status

Table 9: Status of Materials Used in Electronic Applications in Key Global Markets

	Americas	Europe	Asia
Pb	2007	2006	2006
Cd	2007	2006	2006
Hg	2007	2006	2006
Cr (VI)	2007	2006	2006
PBBs	2007	2006	2006
Penta BDEs	2007	2006	2006
Octa BDEs	2007	2006	2006
Deca BDEs	2007	2006	2006
TBBPA			

Color Code:

Green = no restrictions on the horizon

**Yellow = voluntary restriction or requirement
not likely to be in effect within 5 years (but
probably will later)**

**Red = is or likely to be restricted within 5
years (2009)**

DfE is helping make the connection between business and the environment

- Tools are available to build links between the right actors--purchasing, accounting, design
- Provides a meaningful environmental dialogue in an appropriate language
- A way of making long term thinking actionable

General Electric

“EcoMagination”

- Doubling research from \$700 M to \$1.5 Billion
- Introducing clean tech products annually and growing from \$10 billion to \$20 billion
- Public reporting

General Electric

“EcoMagination”

- Viewed as a business opportunity --to create business value
- Has long term, top level commitment
- Being integrated with the Brand
- A commitment

No Regrets

from Fortune magazine Article

- Ricoh...credits part of its profitability to its rigorous recycling and zero waste programs. Sakurai sometimes refers to this approach as his “no regrets” philosophy. Suppose it turns out, in years to come that carbon dioxide release does not contribute significantly to global warming, he says. The company that reduced its emissions just to avoid government sanctions might turn angry over wasted effort. But the company that reduced its emissions and boosted earnings in doing so will have no regrets.

Questions?

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